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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed March 23, 2006 have been fully considered but they are not persuasive.

In response to applicant's argument that Brooks describes a process of treating a plastic waste material that is significantly different from the broke claimed (Remarks, pg. 9), the Examiner disagrees. Brooks clearly discloses reclaiming broke (i.e., virgin scrap material; col. 1, lines 25-30). The plastic waste material described by Brooks represents a fraction of the processed broke. Brooks discloses that the plastic waste material is separated from a major portion of the paper in a hydropulper (col. 1, lines 35-43). Therefore, the plastic waste material containing about 6 to about 33 weight % paper (col. 1, lines 41-43) is a fraction of the repulped broke containing the majority of the polymer coating, in contrast to the fraction from which it is separated which contains the majority of the paper fibers. Brooks also discloses further separation of the polymer coating from the remaining paper fibers (col. 8, lines 14-16) in which the heavy fraction contains greater than 10% paper, which encompasses the claimed range.

In response to applicant's argument that Brooks does not involve pulping in a pulper (Remarks, pgs. 9 & 10), the Examiner disagrees. The hydropulper (i.e., a pulper; col. 1, lines 35-43) provides pulping, as evidenced by the fact that the entering material is ground scrap (i.e., broke; col. 1, lines 36-38) and the exiting material is a slurry (col. 1, lines 39-41).

In response to applicant's argument that Brooks does not teach fiber aggregates coated with a latex polymer (Remarks, pg. 10), the Examiner disagrees. The plastic pellets that the applicant refers to are the result of additional treatment steps after the formation of fiber aggregates (col. 8, line 54 – col. 9, line 36), which the claims do not exclude. As the applicant notes, Brooks also discusses "spit balls" of cellulosic fiber, which are clearly fiber aggregates. At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the "spit balls" would retain minor amounts of polymer coating in the mechanical separation method of Brooks, but would be relatively free from the polymer, and that the cellulosic fibers remaining in the polymeric coating waste would be coated with a larger portion of polymer.

Claim Objections

Claims 19, 33, and 60 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In each case, these claims depend from an independent claim that has been amended to include the about 1% to about 60% limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-8, 14, 19-25, 47-53, 57, and 60-64 are rejected under 35 U.S.C. 103(a) as obvious over Brooks et al (U.S. Patent 5,277,758) in view of, Webster's Dictionary (Webster's Third New International® Dictionary, Unabridged, 1993, Merriam-Webster, Incorporated), and Clark et al (U.S. Patent 3,250,666).

Brooks et al discloses a method (col. 1, lines 15 to 20 and 25 to 30) comprising mechanically treating broke (e.g., virgin scrap; col. 1, lines 25-38 and col. 6, lines 1 to 9) containing cellulosic fibers and a latex polymer (col. 1, lines 23 to 28 and col. 3, lines 18-21) to form fiber aggregates (col. 6, lines 20 to 25), wherein said fiber aggregates have an average size of less than $\frac{1}{2}$ an inch (col. 8, lines 30 to 34), which encompasses the claimed range of from about 0.5 to about 6 millimeters, and wherein a first portion of said fiber aggregates are coated with said latex polymer (col. 8, lines 14 to 15) and a second portion of said fiber aggregates remain relatively free from said latex polymer (col. 8, lines 15 to 16), and wherein said mechanical treatment comprises pulping said broke in a pulper (col. 1, lines 35-38).

Although Brooks does not disclose expressly the weight fraction of latex polymer present in the broke, Brooks does disclose that a plastic coating waste comprising about 6 to about 33 weight % paper is recovered after separating a major portion of the paper in a hydropulper (col. 1, lines 39-43). In other words, the about 6% – about 33% paper represents some amount less than 50% of the total cellulosic fibers in the broke. For examination purposes, the Examiner considered this fraction to be 50%. Therefore, the total cellulosic fibers in the broke would be about twice the disclosed range, or about 13 weight % to 99 weight % (calculated using weight ratios 6+6:94 to 33+33:67).

Therefore, the polymer present in the broke before treatment would have been about 1 weight % to about 87 weight %, which includes one specific endpoint of the claimed range of about 1% to about 60% by weight.

Brooks et al does not disclose expressly that the polyethylene is a latex polymer, or that the second portion of said fiber aggregates are relatively free from said latex polymer.

Webster's Dictionary defines latex as any of various emulsions in water of a synthetic rubber or plastic obtained by polymerization and used chiefly in paint and other coatings (as for paper) and adhesives. The Examiner has interpreted "latex polymer" to mean either a polymer in an emulsion or a polymer remaining after water has been removed from a latex emulsion. Brooks et al provides no indication that the polyethylene coating could not have existed as a latex emulsion prior to coating paper. The Examiner is considering the polyethylene coating of the reference to be equivalent to the latex polymer of the claim.

Clark et al discloses the use of a polyethylene latex in a method of forming cellulosic paper (col. 1, lines 14-17).

Although Brooks et al does not discuss the amount of polymer coating the two portions of fiber aggregates, the patent does describe a waste stream recovered from the hydropulper comprising about 6-33 wt % paper which has been separated from a major portion of the paper (col. 1, lines 39-47). The Examiner construes this to mean that the waste stream is a first portion of said fiber aggregates, coated with a latex polymer, and the major portion of the paper from the hydropulper is a second portion of

Art Unit: 1731

said fiber aggregates remaining relatively free of plastic coating. Brooks also discloses a first portion of the recovered polymeric coating waste stream as having less than 10 weight % paper, and a second portion as having greater than 10 weight % paper (col. 8, lines 14-16). In other words, the second portion has more fiber relative to polymeric coating than does the first portion. Therefore, the second portion is relatively free of polymer in comparison to the first portion.

The size range of Brooks et al, less than $\frac{1}{2}$ an inch, is also applied to claim 3.

The portion distribution of Brooks et al is also applied to claims 6, 7, 8, 19, 20, 60, and 61.

With respect to claims 4 and 5, at the time of the invention, it would have been obvious to a person of ordinary skill in the art that if the method was done using the same parameters for the broke under the same conditions, the resulting fiber aggregates would have the same Freeness as that claimed.

With respect to claim 14, Brooks does not disclose expressly that the broke is derived from a product that comprises a multi-layered paper web. However, Brooks does disclose that the broke is derived from products such as milk cartons (col. 1, lines 23-30), which comprise either a single-layer or multi-layer paper product with a layer of waterproof material. Therefore, the Examiner considers milk cartons to represent a product that comprises a multi-layered paper web.

With respect to claim 21, Brooks discloses forming a paper product that contains said fiber aggregates (col. 1, lines 31 to 35).

With respect to claim 22, Brooks discloses that the paper product may be molded paper cups, trays, plates, egg cartons, and the like (col. 1, lines 31-35), all of which can be produced from a multi-layered web.

With respect to claims 23 and 64, Brooks discloses that said fiber aggregates are incorporated into an inner layer of said multi-layered paper web (col. 1, lines 31-35). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate the fiber aggregates throughout the paper web. The claim does not exclude the fiber aggregates from being also incorporated into the outer layers of the paper web.

With respect to claim 24-25, at the time of the invention, and in the absence of evidence to the contrary, it would have been obvious to a person of ordinary skill in the art to optimize the content of fiber aggregates in the inner layer to achieve desired properties. The wide range claimed suggests a lack of criticality of this factor.

With respect to claims 47, 48, 49, 50, and 53, Brooks, Webster's Dictionary, and Clark are applied as in the rejection to claims 1, 4, and 5.

With respect to claims 51 and 52, Brooks, Webster's Dictionary, and Clark are applied as in the rejection to claims 6 and 8.

With respect to claim 57, Brooks, Webster's Dictionary, and Clark are applied as in the rejection to claim 14.

With respect to claim 62, Brooks, Webster's Dictionary, and Clark are applied as in the rejection to claim 21.

With respect to claim 63, Brooks, Webster's Dictionary, and Clark are applied as in the rejection to claim 22.

With respect to claim 64, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the resulting fiber aggregates in any appropriate way desired.

Brooks et al and Clark et al are analogous art because they are from the same field of endeavor, that of processing polymer-coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the polyethylene described by Clark et al in the latex polymer of Brooks et al, to obtain the invention as specified in Claims 1, 3-8, 14, 19-25, 47-53, 57, and 60-64, because polyethylene solids can be made uniformly white and interfere little with the optical properties of the final paper product (Clark et al, col. 1, lines 40 to 42).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al in view of Webster's Dictionary and Clark et al as applied to claim 1, above, and further in view of Merker et al (U.S. Patent 6,541,099).

With respect to claim 9, Brooks, Webster's Dictionary, and Clark do not disclose that the polymer is an adhesive latex.

Merker et al discloses a latex polymer that is an adhesive latex used to coat cellulosic fibers (col. 1, lines 36-39 and col. 3, lines 18-25).

Brooks et al, Clark et al, and Merker are analogous art because they are directed to a similar problem solving area, that of processing coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to expect the broke to have a adhesive latex polymer as described by Merker to the recycling of polyethylene latex-coated broke of Brooks et al, Webster's Dictionary, and Clark et al, to obtain the invention as specified in claim 9. The motivation for doing so would have been that a latex adhesive is a conventionally used or suitable creping adhesive (col. 5, lines 44-46).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al, Webster's Dictionary, Clark et al, and Merker, as applied to claims 1 and 9, above, and further in view of Danforth (U.S. Patent 6,302,342).

With respect to claim 10, Brooks et al, Webster's Dictionary, Clark et al, and Merker do not disclose expressly the broke solids consistency prior to said pulping.

Danforth ('342) discloses that the broke is diluted to a solids consistency of 5% (col. 4, line 49), which is one specific point within the claimed range of from about 4% to about 10%, prior to said pulping.

With respect to claim 11, 5% consistency is about 6% consistency, which is one specific endpoint of the claimed range of from about 6% to about 8%.

Brooks et al, Clark et al, Merker, and Danforth ('342) are analogous art because they are directed to a similar problem solving area, that of processing coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply a solids consistency of 5% as described by Danforth ('342) prior to the pulping method of Brooks et al, Clark et al, and Merker, to obtain the invention as specified in claim 10, 11, and 54. The motivation for doing so would have been that at

Art Unit: 1731

this consistency, a 2,600 gallon tank (a typical capacity) can hold 1,000 pounds of stock (col. 4, lines 46 to 50).

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al in view of Webster's Dictionary, Clark et al and Merker et al as applied to claims 1 and 9, above, and further in view of Danforth (U.S. Patent 4,365,761).

With respect to claim 12, Brooks, Webster's, Clark, and Merker do not disclose expressly that the pulper is a rotor/stator type pulper.

Danforth et al ('761) discloses that the pulper is a rotor/stator type pulper (col. 1, lines 13 to 17).

With respect to claim 13, Brooks, Webster's, Clark, and Merker do not disclose expressly that the mechanical treatment further comprises refining said broke.

Danforth et al ('761) discloses that the mechanical treatment further comprises refining (col. 5, lines 61 to 65) said broke.

Brooks et al, Clark et al, Merker, and Danforth ('761) are analogous art because they are directed to a similar problem solving area, that of processing coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply a rotor/stator type pulper and further refining as described by Danforth to the broke recycling method of Brooks et al, Webster's, Clark, and Merker, to obtain the invention as specified in claims 12 and 13. The motivation for doing so would have been that this pulper enables processing of difficult to defiber stock (col. 1, lines 22 to 26), and because the pulper produces a defibered condition suitable for introduction to refiners (col. 5, lines 61 to 65).

Claims 15-18, 58, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al in view of Webster's Dictionary and Clark et al as applied to claims 1, 14, and 57 above, and further in view of Anderson et al (US 2001/0031595 A1).

Brooks et al in view of Webster's Dictionary and Clark et al do not disclose expressly the application characteristics of the polymer coating of the furnish broke.

Anderson et al discloses that the product contains said latex polymer in a spaced-apart pattern (p.2, ¶0027, last sentence), the polymer covers less than 60% of said surface (p. 1, ¶0016), which contains 1 specific point within the claimed range of about 10% to about 70% for claim 16, and encompasses the claimed range of about 25% to about 50% for claim 17, and said surface is creped (p. 1, ¶0015).

Brooks et al, Webster's Dictionary, Clark et al, and Anderson et al are analogous art because they are from the same field of endeavor, that of manufacture or reclamation of coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the polymer coating of Brooks et al, Webster's Dictionary, and Clark et al with the application amount, pattern, and creping as described by Anderson to obtain the invention as specified in claims 15-18, 32, 58, and 59. The motivation would have been so that the web has cloth-like properties (p. 2, ¶0019, lines 5-8); and so that it retains liquid after each rinse cycle (p. 2, ¶0022, lines 4-7).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al, Webster's Dictionary, and Clark et al, as applied to claim 1 above, and further in view of Schulman (US Patent 3,154,255).

Brooks et al, Webster's Dictionary, and Clark et al do not disclose expressly that the latex polymer is selected from the claimed group.

Schulman discloses recovering fibers from materials coated with thermoplastic materials, expressly including polyvinyl chloride, polyolefins, and polyvinyls, thermoplastic polyesters, and polycarbonates (col. 1, lines 20-32). The Examiner considers these to include the remaining members of the Markush group.

Brooks, Webster's Dictionary, Clark, Danforth '342, and Danforth '761, and Schulman are analogous art because they are directed to a similar problem solving area, that of reclaiming coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the pulping method of Brooks, Webster's Dictionary, Clark, Danforth '342, and Danforth '761 to the thermoplastic coated fibers described by Schulman to obtain the invention as specified in claim 26.

The motivation would have been to obtain a simple, inexpensive, highly efficient method of separating cellulose fibers from a thermoplastic coating (col. 1, lines 20-23).

Claims 27-31 and 33-35 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks, Webster's Dictionary, Clark, Danforth '342, and Danforth '761, as applied to claims 1, 3, 6, 8, 10, 11, and 13, 19, 20, 21 above, and further in view of Schulman (US Patent 3,154,255).

With respect to claim 27, Danforth '342 is applied as in the rejection to claim 10, above; Danforth '761 is applied as in the rejection to claim 13, above; and Brooks, Webster's, and Clark are applied as in the rejection to claim 1, above.

Brooks, Webster's Dictionary, Clark, Danforth '342, and Danforth '761 do not disclose expressly that the latex polymer is selected from the polymers claimed.

Schulman discloses recovering fibers from materials coated with thermoplastic materials, expressly including polyvinyl chloride, polyolefins, and polyvinyls, thermoplastic polyesters, and polycarbonates (col. 1, lines 20-32). The Examiner considers these to include the remaining members of the Markush group.

With respect to claims 28, 29, 30, 33, 34, and 35, Brooks, Webster's Dictionary, and Clark are applied as in the rejections to claims 3, 6, 8, 19, 20, and 21, above.

With respect to claim 31, Danforth '342 is applied is in the rejection to claim 11, above.

Brooks, Webster's Dictionary, Clark, Danforth '342, Danforth '761, and Schulman are analogous art because they are directed to a similar problem solving area, that of processing coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the pulping method of Brooks, Webster's Dictionary, Clark, Danforth '342, and Danforth '761 to the thermoplastic coated fibers described by Schulman to obtain the invention as specified in claims 27-31 and 33-35.

The motivation would have been to obtain a simple, inexpensive, highly efficient method of separating cellulose fibers from a thermoplastic coating (col. 1, lines 20-23).

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al in view of Webster's Dictionary, Clark et al, Danforth '342, and Danforth '761, and Schulman as applied to claims 1, 14, and 27, above, and further in view of Anderson et al (US 2001/0031595 A1).

Brooks et al in view of Webster's Dictionary and Clark et al do not disclose expressly the application characteristics of the polymer coating of the furnish broke.

Anderson et al discloses that the product contains said latex polymer in a spaced-apart pattern (p.2, ¶0027, last sentence).

Brooks et al, Webster's Dictionary, Clark et al, Danforth '342, and Danforth '761, Schulman, and Anderson et al are analogous art because they are from the same field of endeavor, that of manufacture or reclamation of coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the polymer coating of Brooks et al, Webster's Dictionary, and Clark et al with the application amount, pattern, and creping as described by Anderson to obtain the invention as specified in claim 32. The motivation would have been so that the web has cloth-like properties (p. 2, ¶0019, lines 5-8); and so that it retains liquid after each rinse cycle (p. 2, ¶0022, lines 4-7).

Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al, Webster's Dictionary, and Clark et al, as applied to claims 1, 47, and 53, above, and further in view of Danforth (U.S. Patent 6,302,342).

With respect to claim 54, Brooks et al, Webster's, Clark et al, and Danforth ('342) are applied as in the rejection to claim 10, above.

Brooks et al, Webster's, Clark et al, and Danforth ('342) are analogous art because they are directed to a similar problem solving area, that of processing coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply a solids consistency of 5% as described by Danforth ('342) prior to the pulping method of Brooks et al, Webster's, and Clark et al, to obtain the invention as specified in claim 54. The motivation for doing so would have been that at this consistency, a 2,600 gallon tank (a typical capacity) can hold 1,000 pounds of stock (col. 4, lines 46 to 50).

Claims 55 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al in view of Webster's Dictionary and Clark et al as applied to claims 47 and 53, above, and further in view of Danforth (U.S. Patent 4,365,761).

With respect to claim 55, Brooks et al, Webster's, Clark et al, and Danforth ('761) are applied as in the rejection to claim 12, above.

With respect to claim 56, Brooks et al, Webster's, Clark et al, and Danforth ('761) are applied as in the rejection to claim 13, above.

Brooks et al, Webster's, Clark et al, and Danforth ('761) are analogous art because they are directed to a similar problem solving area, that of processing coated paper.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply a rotor/stator type pulper and further refining as described by Danforth to the broke recycling method of Brooks et al, Webster's, and Clark, to obtain

the invention as specified in claims 55 and 56. The motivation for doing so would have been that this pulper enables processing of difficult to defiber stock (col. 1, lines 22 to 26), and because the pulper produces a defibered condition suitable for introduction to refiners (col. 5, lines 61 to 65).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. 5,690,789 shows a method of agglomerating a mixture of papermaking fiber and latex, including dry comminution of cellulose fiber aggregates in the form of paper or entangled fiber clumps. U.S. 3,879,257 shows creping, as cited in the instant specification. U.S. 5,643,413 shows production of a multi-ply paper in which

Art Unit: 1731

pulp stock containing latexes is used as a middle ply. U.S. 6,273,999 shows pulping of broke that contains 10% latex, and which tends to amalgamate to form agglomerates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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